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NOTICE OF ALLOWANCE AND FEE(S) DUE

65565 7590 12/30/2008

SUGHRUE-265550
2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER

COSIMANO, EDWARD R

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 12/30/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,983

10/20/2005

Masayoshi Sawai

Q90682

1026

TITLE OF INVENTION: WIRE-LIKE STRUCTURE TORSION ANGLE CALCULATING METHOD, AND DEVICE AND PROGRAM THEREFOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/30/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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P.O. Box 1450
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or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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65565 7590 12/30/2008

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,983 10/20/2005 Masayoshi Sawai Q90682 1026

TITLE OF INVENTION: WIRE-LIKE STRUCTURE TORSION ANGLE CALCULATING METHOD, AND DEVICE AND PROGRAM THEREFOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 03/30/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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COSIMANO, EDWARD R 2863 702-150000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,983	10/20/2005	Masayoshi Sawai	Q90682	1026
65565	7590	12/30/2008	EXAMINER	
SUGHRUE-265550 2100 PENNSYLVANIA AVE. NW WASHINGTON, DC 20037-3213			COSIMANO, EDWARD R	
			ART UNIT	PAPER NUMBER
			2863	
DATE MAILED: 12/30/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 76 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 76 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/553,983	SAWAI ET AL.	
	Examiner	Art Unit	
	Edward R. Cosimano	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 24 September 2008.
2. ☒ The allowed claim(s) is/are 1-11,13-15 and 17-28.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

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1. EXAMINER'S COMMENT

1.1 When preparing this Office action the examiner considers the instant application to include:

A) the Oath/Declaration filed on 20 October 2005 which is acceptable to the examiner;

B) the Abstract filed on 17 March 2008 which is acceptable to the examiner;

C) figures 1(A), 1(B), 2(A), 2(B), 3, 4(A), 4(B), 4(C), 5, 6(A), 6(B), 7(A), 7(B), 8(A), 8(B), 9, 10, 11(A), 11(B), 11(C), 12(A), 12(B), 12(C), 12(D), 12(E), 13, 14, 15(A), 15(B), 15(C), 15(D), 16, 17, 18, 19, 20, 21, 22(A), 22(B) & 22(C) of the set of drawings containing 26 sheets of 40 figures comprising figures 1(A), 1(B), 2(A), 2(B), 3, 4(A), 4(B), 4(C), 5, 6(A), 6(B), 7(A), 7(B), 8(A), 8(B), 9, 10, 11(A), 11(B), 11(C), 12(A), 12(B), 12(C), 12(D), 12(E), 13, 14, 15(A), 15(B), 15(C), 15(D), 16, 17, 18, 19, 20, 21, 22(A), 22(B) & 22(C) as presented in the set of drawings filed on 06 September 2006 where figure 1(A), 1(B), 2(A), 2(B), 3, 4(A), 4(B), 4(C), 5, 6(A), 6(B), 7(A), 7(B), 8(A), 8(B), 9, 10, 11(A), 11(B), 11(C), 12(A), 12(B), 12(C), 12(D), 12(E), 13, 14, 15(A), 15(B), 15(C), 15(D), 16, 17, 18, 19, 20, 21, 22(A), 22(B) & 22(C) of the above set of drawings are acceptable to the examiner;

D) the substitute written description as filed on 17 March 2008 and amended on 24 September 2008; and

E) the set of claims as filed on 24 September 2008.

1.2 Applicant's claim for the benefit of an earlier filing date pursuant to 35 U.S.C. 120 is acknowledged.

1.3 Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

1.4 The examiner has considered the prior art cited in the base applications.

1.5 The examiner notes applicant's statement of substance of interview filed on 24 September 2008.

1.6 Response to applicant's arguments.

1.6.1 The objections and rejection that have not been repeated here in have been over come by applicant's last response.

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2. REASONS FOR ALLOWANCE

2.1 The following is a statement of reasons for the indication of allowable subject matter:

A) the prior art, for example:

(1) Nath discloses that it is useful and beneficial to use a finite element analysis in order to simulate a beamed element.

(2) either Sakaura et al (EP 1267284 A2 or EP 1267285 A2 or EP 1267286 A2 or JP 2002-373533 A or 2003/0020711 or 2003/0020715 or 6,842,173) disclose a machine/process that provides the useful and beneficial function of designing wiring harnesses by dividing the wiring harness into segments and overlaying each of the segments of the harness over one another in order to simulate the final 3 dimension shape of the wiring harness.

B) however, the prior art does not fairly teach or suggest in regard to claims 1, 13, 23 & 25 a process in claims 1 & 23 and a machine/article in claims 13 & 25 that provides the useful and beneficial function of determining the twist angle for a wiring harness by providing actions in claims 1 & 23 and structures in claims 13 & 25 that perform at least the functions of:

(1) generating a “deformed shape model”, that describes the main wire bundle of a wire-like structure as a series of one or more beam elements/sections that are clamped with clamp structures at predetermined locations and a clamp axis at each location of a clamp and/or branch of a sub wire of the wire-like structure axis;

(2) generating a “reference shape model”, that describes the wire-like structure as a coupled member of one or more beam elements and further includes reference axis at each location of a clamp and/or branch of a sub wire of the wire-like structure axis;

(3) generating a shape of the wire like structure by using a finite element analysis in order to considering the shape and material properties of the wire like structure while “deforming the reference shape model” and superimposing the “deformed reference shape model” on the “deformed shape model”;

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(4) generating a “twist angle” by evaluating the “deformed reference shape model” to determine the resulting angle formed between the “reference axis” and the “clamp axis” and/or “virtual clamp axis”; and

(5) outputting the determined “twist axis” to be used in constructing/building a wire harness.

Claims 2-4, which depend from claim 1, are allowable for the same reason.

C) however, the prior art does not fairly teach or suggest in regard to claims 5 & 24 a process in claims 5 & 24 that provides the useful and beneficial function of determining the twist angle for a wiring harness by providing actions in claims 5 & 24 that perform at least the functions of:

(1) generating a “finite element model” of a wire like structure by describing the wire-like structure as a series of one or more coupled elastic beam elements/sections;

(2) generating a “reference shape in a plane” of the wire like structure in a plane by using a finite element model that considers the shape and material properties of the wire-like structure in order to deform the wire-like structure to the reference shape;

(3) generating a “twist angle” as the angle formed between the plane and the sub wire bundle structures; and

(4) outputting the determined “twist axis” to be used in constructing/building a wire harness.

Claims 6-11, which depend from claim 5, are allowable for the same reason.

D) however, the prior art does not fairly teach or suggest in regard to claims 14, 17 & 26 a process in claims 14 & 26 and a machine/article in claim 17 that provides the useful and beneficial function of determining the twist angle for a wiring harness by providing actions in claims 14 & 26 and structures in claim 17 that perform at least the functions of:

(1) generating a “main wire deformed shape model” that describes the main wire member of a wire-like structure as a coupled series of one or more

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beam elements/sections and a branching axis of a sub wire bundle at the location of a branch;

(2) generating a “main wire reference shape model” that describes the main wire member of a wire-like structure as a coupled series of one or more reference beam elements/sections that have been straight stretched with out twisting and a first reference axis for a sub wire bundle at the location branch node;

(3) generating a “first twist angle of the main wire” formed by the difference between the first reference axis and the branch axis after having used finite element analysis to consider the shape and material properties of the wire like structure and after superimposing the deformed shape mode on the main wire member;

(4) generating a “sub wire deformed shape model” that describes the sub wire member of a wire-like structure as a coupled series of one or more beam elements/sections and a clamp axis of a sub wire bundle at the location of a branch;

(5) generating a “sub wire reference shape model” that describes the sub wire member of a wire-like structure as a coupled series of one or more reference beam elements/sections that have been straight stretched with out twisting and a second reference axis at the location of a clamp;

(6) generating a “second twist angle of the sub wire” formed by the difference between the second reference axis and the clamp axis after having used finite element analysis to consider the shape and material properties of the sub wire like structure and after superimposing the deformed sub wire shape mode on the deformed sub wire shape model;

(7) generating a “twist angle” by correcting the determined second twist angle based on the first twist angle in order to obtain the angle formed by the first reference axis and the clamp axis; and

(8) outputting the determined “twist axis” between the first reference axis and the clamp axis to be used in constructing/building a wire harness.

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E) however, the prior art does not fairly teach or suggest in regard to claims 15, 27 & 28 a process in claims 15 & 27 and an article/machine in claim 28 that provides the useful and beneficial function of determining the twist angle for a wiring harness by providing actions in claims 15 & 27 and structures in claim 28 that perform at least the functions of:

(1) generating a “main wire deformed shape model” that describes the main wire member of a wire-like structure as a series of one or more coupled beam elements/sections and a first branch axis of a sub wire bundle at the location of a branch;

(2) generating a “main wire reference shape model”, that describes the main wire member of a wire-like structure as a coupled series of one or more reference beam elements/sections that have been obtained by straight stretching a main wire member with out twisting and a first reference axis at the location of a branch;

(3) generating a “first twist angle of the main wire” between first reference axis and the first branch axis by using finite element analysis to consider the shape and material properties of the wire like structure and superimposing a deformed main wire reference shape mode on the main wire deformed shape model;

(4) generating a “sub wire deformed shape model” that describes the sub wire member of a wire-like structure as a coupled series of one or more beam elements/sections and a second branch axis of a sub wire member at the location of a branch;

(5) generating a “sub wire reference shape model”, that describes the sub wire member of the wire-like structure as a coupled series of one or more reference beam elements/sections of straight stretching of the main wire structure with out twisting and a second reference axis at the location of a branch;

(6) generating a “second twist angle” of the sub wire member as the angle between second reference axis and the second branch axis by using finite element analysis that considers the shape and material properties of the wire like structure

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and superimposing a deformed sub wire reference shape mode on the sub wire deformed shape model;

(7) generating a “twist angle” by correcting the determined second twist angle based on the first twist angle in order to obtain the angle formed by the first reference axis and the second branch axis; and

(8) outputting the determined “twist axis” between the first reference axis and the second branch axis to be used in constructing/building a wire harness.

F) however, the prior art does not fairly teach or suggest in regard to claims 18, 21 & 22 a process in claim 18, a machine in claim 21, and a article/machine in claim 22 that provides the useful and beneficial function of determining the twist angle for a wiring harness by providing actions in claim 18 and structures in claims 21 & 22 that perform at least the functions of:

(1) generating a “deformed shape model”, that describes the main wire member of a wire-like structure as a coupled series of one or more beam elements/sections and a clamp axis at each clamped node/location;

(2) generating a “reference shape model”, that describes the main wire member of a wire-like structure as a coupled series of one or more reference beam elements/sections obtained by straight stretching of the main wire member with out twisting and a first reference axis at the location of each clamped node/branch;

(3) generating a “twist free plane” of the wire like structure by interconnecting the references axes when the wire shape model is deformed and then superimposed on the wire deformed shape model; and

(4) outputting or displaying the determined “twist free plane” in combination with the deformed shape and the clamp axis to be used in constructing/building a wire harness.

Claim 19, which depends from claim 18, is allowable for the same reason.

G) however, the prior art does not fairly teach or suggest in regard to claim 20 a process in claim 20 that provides the useful and beneficial function of determining the

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twist angle for a wiring harness by providing actions in claim 20 that perform at least the functions of:

(1) generating a “main wire deformed shape model” that describes the main wire member of a wire-like structure as a coupled series of one or more beam elements/sections and a first clamp axis at each branching node/location;

(2) generating a “main wire reference shape model”, that describes the main wire member of a wire-like structure as a coupled series of one or more reference beam elements/sections obtained by straight stretching of the main wire member with out twisting and a first reference axis at the location of a clamped node/branch;

(3) generating a “first twist free plane” of the wire like structure by interconnecting the first references axes when the main wire member shape model is deformed and then superimposed on the main wire member deformed shape model;

(4) generating a “sub wire deformed shape model” that describes the sub wire member of a wire-like structure as a coupled series of one or more beam elements/sections and a second clamp axis at each branching node/location;

(5) generating a “sub wire reference shape model”, that describes the sub wire member of a wire-like structure as a coupled series of one or more reference beam elements/sections obtained by straight stretching of the sub wire member with out twisting and a second reference axis at the location of a clamped node/branch;

(6) generating a “second twist free plane” of the wire like structure by interconnecting the second references axes when twist of the first reference axes are propagated to the second reference axes and the sub wire shape model is deformed and then superimposed on the main wire deformed shape model; and

(7) outputting or displaying the determined “first twist free plane” and the determined “second twist free plane” in combination with the “first clamp axis” and the “second clamp axis to be used in constructing/building a wire harness.

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward R. Cosimano whose telephone number is 571-272-0571. The examiner can normally be reached on 571-272-0571 from 7:30am to 4:00pm (Eastern Time).

3.1 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn, can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

3.2 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ERC
12/20/2008

**/Edward Cosimano/
Primary Examiner Unit 2863**